## California Public Employees' Retirement System

Parallel Valuation and Certification of the Actuarial Valuations of the CalPERS Contracting Public Agency Plans as of June 30, 2003

Report Completed In Satisfaction of Task 1 of Contract 2003-3236

Approved:

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## Overview

Under Task 1 of Contract 2003-3236, EFI Actuaries (EFI) has conducted actuarial valuations as of June 30, 2003 of a sample of the Pension Plans for Contracting Public Agencies of the California Public Employees' Retirement System (CalPERS). The purpose of these valuations was to validate independently the actuarial valuations of these plans performed by CalPERS' staff actuaries as of the same date.

As a result of our efforts, we are able to certify that the liabilities and costs computed in the staff valuations as of June 30, 2003 are reasonably accurate and were computed in accordance with generally accepted actuarial principles. In fact, with only a few exceptions, based on the data, assumptions, and methods employed in the staff valuations, the costs independently computed by EFI were within 5% of those in the staff valuations.

In general, we found that the valuations of the contracting public agency plans were prepared by the CalPERS staff in a careful, thorough, and professional manner.



## Methodology

This parallel valuation and certification involves three steps:

## Review of Methods and Assumptions

The actuarial assumptions and methods employed in the public agency valuations were reviewed by EFI in order to establish whether they meet acceptable standards of actuarial practice.

## • Independent Parallel Valuation

In order to verify the correctness of calculations in the public agency valuations, EFI conducted a number of independent, parallel valuations using its own actuarial models. These independent valuations determine whether actuarial assumptions and methods are applied properly and yield the reported results.

In preparing our parallel valuations, we relied on member and asset data supplied by CalPERS' staff. As is usual in actuarial valuations, this data was neither audited nor independently verified.

Parallel valuations were conducted for 20 participating public agency plans. The ten largest public agency plans were selected based on the number of active and inactive members. In addition, another ten plans were selected at random; for the most part, these were plans of small agencies, since most of the contracting agencies are small.

Many of the public agency plans contain multiple sets of benefit provisions. For example, Riverside County sponsors different benefit provisions for various tiers of miscellaneous and safety members. Separate parallel valuations were also run for the six risk pools discussed below. In all, parallel valuations were completed for 32 separate plans.

#### • Reconciliation of Results

In the event that the costs computed by EFI differ by more than 5% from those computed by CalPERS' staff, a reconciliation is required. This reconciliation proceeds in three steps:

- 1. Establishing that the same member data has been used by EFI and by staff;
- 2. Researching methodological differences between the EFI and staff approaches to computing liabilities and costs: and
- 3. Comparing test life results to uncover subtle differences in approach that may result in material differences in liabilities and costs.

In the course of this audit, an extensive analysis of test lives was performed as part of the parallel valuation.

For all of the individual plans included in the audit, sample lives were provided to us for each valuation group – active, inactive, transfers, and retirees – and for each plan. For each plan we audited, even when



the total plan results produced by EFI and by CalPERS staff were closely comparable, we reviewed the individual valuation group results as well as test life results. In this way, we hoped to detect any error in the valuations that might otherwise have been hidden by an offsetting error.

We have noted that the total liabilities for each plan and each experience pool were measured by EFI to be within 5% of the corresponding numbers measured by CalPERS' staff. We also found that in almost all cases this was true when comparing liabilities of individual valuation groups. There were several instances in which a discrepancy was noticed in one individual valuation group – for example, transfers. In these cases, we found it necessary to not only compare individual test life liabilities, but also to look at individual benefits for them (retirement, death, disability etc.).

As a result of this procedure, we compared nearly all of the sample lives provided. We found that the individual test life liabilities were very close to those computed by EFI in most cases. For the sample lives in which a discrepancy did appear, we were able to communicate with CalPERS' staff to better understand the issue, and if appropriate, refine our valuation model further.



## **Review of Methods and Assumptions**

The actuarial methods and assumptions used in the public agency valuations are well within acceptable standards of actuarial practice.

The EFI actuarial model used to run the parallel valuations was specifically designed for auditing the CalPERS public agency plans. The EFI model is a traditional closed group, seriatim, deterministic, liability based model, with the following characteristics:

## 1. Handling of Member Data

The EFI model computes liabilities one life at a time.

The same approach to data handling is used by the EFI and CalPERS AVS models. The EFI actuarial model handles vesting service, benefit service, and normal cost service as separate items.

## 2. Computation of Accrued Liabilities

The EFI valuation model was designed from the outset to compute entry age normal past service liabilities and normal cost in the same manner as CalPERS AVS.

## 3. Computation of Liabilities

The EFI actuarial model uses the traditional approach of actuarial commutation functions to compute plan liabilities.

Both CalPERS staff and EFI ignored the possible impact of benefit limitations under Internal Revenue Code Section 415 on liabilities and contribution rates. The effect of this Code section is negligible.



## **Risk Pools**

The CalPERS Board and staff recently combined many of the public agency plans within the System into various risk pools. Several of the plans that were audited by EFI are among the plans that were pooled with others. Accordingly, we conducted a parallel valuation for each of the risk pools that contain one or more of the audited plans. There were six pools that fell under this category. The liabilities and normal costs measured by EFI were within 5% of those measured by CalPERS' staff in all of the pools, while the total cost was within 5% in five of the six pools.



#### **Parallel Valuation Results**

As noted above, with only a few exceptions, based on the data, assumptions, and methods employed in the staff valuations, the costs independently computed by EFI in our parallel actuarial valuations were within 5% of those in the staff valuations.

Given the number of plans studied and the tight tolerance of 5% for plan costs, it is not unexpected to find a few plans for which the EFI and CalPERS staff valuations produced slightly different results. This situation occurred for two individual plans and for one pool.

#### Parallel Valuation Results – Individual Plans

The three appendices at the end of this Report summarize the results of the parallel valuations of the public agency plans and risk pools.

For two plans – the Riverside County Safety Plan and the City of Long Beach Miscellaneous Plan, the employer contribution rates computed by EFI were not within 5% of that resulting from the staff valuation. However, the liabilities and total normal costs computed by EFI were very close to those computed by CalPERS' staff.

There was one basic phenomenon causing the individual plan valuations performed by CalPERS' staff to differ from the parallel valuations performed by EFI: The calculation of amortization cost.

In the two differing cases, the unfunded accrued liability was very low: The unfunded amount, which is amortized as component of the cost, represented only a small fraction of the accrued liability. This means that a small percentage discrepancy in accrued liability would result in a very large percentage difference in the unfunded amount, thus distorting the amortization cost. The total cost difference was subsequently greater than 5% of the employer cost for these plans.

The table below summarizes the results for these plans.

Long Beach Miscellaneous Plan	Fully Projected <u>Liability</u>	Accrued Liability	Total Normal <u>Cost (\$)</u>	Employer Contribution (% Pay)
EFI	1,560,158,528	1,269,322,613	37,663,831	12.235%
CalPERS	1,520,131,150	1,234,749,237	38,254,531	11.325%
Ratio	102.6%	102.8%	98.5%	108.0%
Riverside Safety Plan				
EFI	1,247,741,338	896,393,969	40,585,947	19.967%
CalPERS	1,255,357,096	906,507,089	41,723,649	21.122%
Ratio	99.4%	98.9%	97.3%	94.5%



We note that in the above cases, the liabilities and total normal cost are very close and that the differences in the employer contribution are a result of sensitivities rather than material differences. Accordingly, we feel no hesitation in confirming the results of the CalPERS staff valuations.

## <u>Parallel Valuation Results – Risk Pools</u>

The one case in which the valuation results were more than 5% apart was Pool 7 (Safety Plan -2.5% @ 50).

The valuation results are compared in the table below.

<u>Pool 7 Safety Plan – 2.5% @ 50</u>	Fully Projected <u>Liability</u>	Accrued Liability	Total Normal <u>Cost (\$)</u>	Employer Contribution (% Pay)
EFI	1,625,273,044	1,212,391,189	42,968,082	12.204%
CalPERS	1,625,564,826	1,218,082,935	41,560,955	11.510%
Ratio	100.0%	99.5%	103.4%	106.0%

As with the individual plans, , the liabilities and total normal cost are very close and the differences in the employer contribution are a result of sensitivities rather than material differences. Thus, we are able to confirm the results of the CalPERS staff valuations of the risk pools.



#### **Other Issues**

Several interesting issues arose during the course of the audit. These are discussed below.

#### Member Data

This Report concerns itself with the computation of liabilities and costs relying on the available member data; prior reports prepared by EFI Actuaries have had the same focus. Based on the project parameters specified by the Board and staff, the issue of the accuracy of the underlying member data has been and continues to be excluded from our analysis.

#### Transferred Members

Participants who are employed at more than one public agency during the course of their careers require special handling for valuation purposes.

One source of difference between the CalPERS valuations and the EFI parallel valuations is the calculation of liabilities for transferred participants, specifically for death and disability benefits. This does not represent a significant source of error because in most plans, the transfer liability represents a very small portion of the total.

According to the plan provisions published in Appendix B of CalPERS public agency reports, transferred participants are entitled to the following benefits:

- o Retirement/vesting/refund A pro-rata portion of their total benefit based on contributions or service at the prior employer
- o Ordinary disability A pro-rata portion of their total benefit based on service at the prior employer
- Duty disability A return of member contributions
- Pre-retirement death None

During the analysis of several dozen individual sample lives we discovered that the retirement, vesting, ordinary disability, and refund benefits appear to have been valued properly. However, the pre-retirement death benefit appears to be a refund of contributions when the death is duty-related. This is likely actual administrative practice, and is also appropriate. The only inconsistency is the description shown in the valuation report.

For non-job-related deaths, a liability is computed in the CalPERS staff valuation that is not associated with a contribution refund. This is a very small portion of the total liability for any given participant, and is extremely small when compared to the liability of the plan. It is a possibility that this is just a reporting issue similar to the above. We recommend that the language in the reports regarding death and disability benefits for transferred members be reviewed and edited if necessary.

For duty-related disabilities, the report indicates that the benefit is simply a refund of contributions. However, the liabilities calculated for these individuals, again based on the sample lives provided,



show that a much greater benefit is being valued. This is appropriate: In the event that a member becomes disabled while eligible for retirement, a retirement benefit would be paid. As described above, a retirement benefit is calculated on a pro-rata basis, with a portion of it being the responsibility of the former employer.

Therefore, as for the death benefit, the wording of the duty disability benefit description for transferred members in the actuarial valuation report should be reviewed and edited if necessary.

As previously mentioned, none of these issues caused the overall valuation results to come into question.

## • Part-Time Participants

During the course of our review of the individual active life samples, we examined the valuation of part-time employees; it appeared that the liabilities of these members were computed using a different method than is used for the full-time active members. This issue is material, since for several of the audited plans, there are a significant number of part-time employees.

According to the materials published on the CalPERS website, the retirement benefit of a part-time employee is calculated based on annualized pay and partial service credits. The method of valuation employed by CalPERS' staff takes this into account by annualizing pay and projecting partial service for benefit purposes. To accurately reflect the actual pay expected though, the present value of future pay is calculated on a part-time basis. We found this method to be reasonable and appropriate.



#### **Reconciliation of Results**

As can be seen in the Appendices, the liabilities and total normal costs calculated independently by EFI are within 5% of those calculated by CalPERS AVS. The reasons for the differences in total cost are as follows:

• Relative Magnitude Of Unfunded Actuarially Accrued Liability

In some cases, a small discrepancy in the actuarial liability is exacerbated when computing the unfunded actuarial accrued liability. This is due to the magnitude of the unfunded portion of the actuarial accrued liability when compared to the total accrued liability. This has a direct effect on the total cost because one component of the total cost is the amortization of the unfunded liability.

For all but two of the individual plans, this phenomenon did not greatly distort the total cost results. However, the impact on cost on those two plans was noted above.

Total Normal Cost Versus Employer Normal Cost

In all cases, the total normal cost calculated by EFI is within 5% of that calculated by AVS. Calculating the employer portion by reducing the total by the employee contributions magnifies small discrepancies in the total. This, much like the unfunded actuarial accrued liability issue above, has an impact on total cost.

The effect, however was not so much as to skew the total cost results in for any individual plan. For Pool 7, however this causes the total cost (represented only by the employer portion of the normal cost) calculated by EFI to be greater than 5% from the total cost measured by the CalPERS staff.



**Appendix 1: Demographic Data** 

			Averaç	ge Age	Average	Service	Avera	ge Pay
Selected Plans	Plan	Formula	6/30/03 Data	AVS 6/30/2003	6/30/03 Data	AVS 6/30/2003	6/30/03 Data	AVS 6/30/2003
Santa Clara, County of	Miscellaneous	2% @ 55	36.31	36.30	1.19	1.19	43,223	43,223
126								
	Miscellaneous	2% @ 55	44.77	44.77	9.85	9.84	65,860	65,855
Riverside, County of	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
129			0.00	0.00	0.00	0.00	0	0
	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
			0.00	0.00	0.00	0.00	0	0
	Miscellaneous	3% @ 60	42.78	38.93	8.02	8.00	42,788	42,779
			0.00	0.00	0.00	0.00	0	0
Riverside, County of 129	Safety	3% @ 50	0.00	0.00	0.00	0.00	0	0
	Safety	3% @ 50	37.72	37.72	7.80	7.80	50,830	50,846
			46.02	46.02	18.44	18.44	85,942	85,942
Del Rey Oaks, City of (Pool 6) 1277	Miscellaneous	2% @ 55	39.82	39.82	8.59	8.59	50,952	50,952
Solano, County of	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
143			0.00	0.00	0.00	0.00	0	0
	Miscellaneous	2.7% @55	46.10	46.10	8.96	8.95	52,543	52,531
			0.00	0.00	0.00	0.00	0	0
Linda Fire Protection District 1470 (Pool 1)	Miscellaneous	2% @ 60	46.01	46.01	4.00	4.00	29,826	29,826
Santa Cruz County Housing Authority 1682 (Pool 5)	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
	Miscellaneous	3% @ 60	40.50	40.50	6.77	6.77	47,425	47,425
Monterey, County of	Miscellaneous	2% @ 55	63.85	63.85	36.80	36.80	38,584	38,584
227	Miscellaneous	2% @ 55	43.69	43.68	8.54	8.53	46,372	46,372
Sanger, City of (Pool 7) - Tier 1	Safety Fire	2% @ 50	0.00	0.00	0.00	0.00	0	0
682			49.26	49.26	24.84	24.84	70,520	70,520
Tier 2	Safety Fire	2% @ 50	36.80	36.80	5.00	5.00	48,045	48,045



			Avera	ge Age	Average	Service	Averaç	ge Pay
Selected Plans	Plan	Formula	6/30/03 Data	AVS 6/30/2003	6/30/03 Data	AVS 6/30/2003	6/30/03 Data	AVS 6/30/2003
Long Beach, City of 300	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
	Miscellaneous	2.7% @ 55	50.83	50.83	21.12	21.12	57,430	57,430
	Miscellaneous	2.7% @ 55	40.76	40.76	4.92	4.92	45,722	45,722
LA County Office of Education	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
191			85.40	85.40	8.29	8.29	24,315	24,315
	Miscellaneous	2.5% @ 55	56.97	56.97	27.95	27.95	56,327	56,327
			44.29	44.28	8.22	8.21	40,521	40,520
San Francisco BART	Miscellaneous	2% @ 55	48.42	48.42	12.72	12.72	64,679	64,679
396			0.00	0.00	0.00	0.00	0	0
			39.30	39.30	7.39	7.38	48,576	48,576
			45.66	45.66	11.45	11.45	83,365	83,365
Santa Maria Public Airport District	Miscellaneous	2% @ 55	50.11	50.11	7.92	7.92	48,032	48,032
1066 (Pool 2)			0.00	0.00	0.00	0.00	0	0
Pleasant Hill, City of (Pool 9) 512	Safety	3% @ 50	37.17	37.17	9.89	9.89	76,517	76,517
Oakland, City of 829	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
	Miscellaneous	2% @ 55	0.00	0.00	0.00	0.00	0	0
	Miscellaneous	2.7% @ 55	47.18	47.15	11.73	11.67	65,230	65,121
	Miscellaneous	2.7% @ 55	0.00	0.00	0.00	0.00	0	0
Merced, City of	Safety	3% @ 50	0.00	0.00	0.00	0.00	0	0
			39.94	39.94	13.61	13.60	54,393	54,393
			0.00	0.00	0.00	0.00	0	0
364			39.32	39.32	10.79	10.79	54,361	54,361
Redwood, City of 70	Miscellaneous	2% @ 55	43.01	43.01	8.81	8.81	60,541	60,541



			Averaç	ge Age	Average	Service	Averaç	ge Pay
Selected Plans	Plan	Formula	6/30/03 Data	AVS 6/30/2003	6/30/03 Data	AVS 6/30/2003	6/30/03 Data	AVS 6/30/2003
Sacramento, City of 1122	Miscellaneous	2% @ 55	54.87	54.86	7.80	7.80	26,236	26,236
	Miscellaneous	2% @ 55	42.38	42.37	8.37	8.37	43,757	43,757
National City	Safety	3% @ 50	42.20	42.20	12.65	12.64	64,911	64,911
251			38.22	38.22	10.10	10.10	68,144	68,144
Turlock Mosquito Abatement District 851 (Pool 2)	Miscellaneous	2% @ 55	46.96	46.96	11.59	11.59	42,961	42,961
POOL 1	Miscellaneous	2% @ 60	44.33	44.33	7.28	7.27	41,736	41,751
POOL 2	Miscellaneous	2% @ 55	44.28	44.28	7.96	7.96	48,027	48,015
POOL 5	Miscellaneous	3% @ 60	44.59	44.59	8.66	8.66	49,093	49,093
POOL 6	Safety	2% @ 55	38.22	38.22	6.72	6.72	44,752	44,752
POOL 7	Safety	2% @ 50	38.78	38.77	9.30	9.30	61,264	61,264
POOL 9	Safety	3% @ 50	39.25	39.25	10.46	10.45	68,045	68,032



# Appendix 2: Individual Plan Liability and Cost Comparison

			Fully Projected Liabilities Accrued Liabilities Total Normal Cost		Employ as a % o					
				AVS		AVS	EFI	AVS	EFI	AVS
Selected Plans	Plan	Formula	EFI 6/30/2003	6/30/2003	EFI 6/30/2003	6/30/2003	6/30/2003	6/30/2003	6/30/2003	6/30/2003
Santa Clara, County										
of	Miscellaneous	2% @ 55	4,655,143,818	4,569,271,227	3,497,473,805	3,411,845,291	144,576,262	149,941,430	13.528%	13.426%
126			101.9%		102.5%		96.4%		100.8%	
Riverside, County of	Miscellaneous	2% @ 55	2,900,929,027	2,861,699,564	2,046,388,572	1,998,848,819	108,708,828	113,714,187	16.038%	16.274%
129		3% @ 60	101.4%		102.4%		95.6%		98.5%	
Riverside, County of	Safety	3% @ 50	1,247,741,338	1,255,357,096	896,393,969	906,507,089	40,585,947	41,723,649	19.967%	21.122%
129			99.4%		98.9%		97.3%		94.5%	
Del Rey Oaks, City of										
(Pool 6)	Miscellaneous	2% @ 55	2,349,891	2,347,905	1,772,693	1,777,471	59,095	59,729	24.696%	24.988%
1277			100.1%		99.7%		98.9%		98.8%	
Solano, County of	Miscellaneous	2% @ 55	747,811,138	734,954,714	548,122,829	533,338,786	26,649,074	27,980,347	13.416%	13.584%
143		2.7% @55	101.7%		102.8%		95.2%		98.8%	
Linda Fire Protection										
District	Miscellaneous	2% @ 60	99,924	99,651	50,616	50,146	5,049	5,203	9.496%	9.860%
1470 (Pool 1)			100.3%		100.9%		97.0%		96.3%	
Santa Cruz County	Missellenesus	20/ @ FF	45 445 070	4E 0EE 00E	40 247 620	10 007 060	676 000	700 420	19.750%	20.146%
Housing Authority	Miscellaneous	2% @ 55	15,445,979	15,255,825	10,347,629	10,097,969	676,232	708,439		20.146%
1682 (Pool 5)		3% @ 60	101.2%		102.5%		95.5%		98.0%	
Monterey, County of	Miscellaneous	2% @ 55	853,591,701	840,380,069	627,386,702	614,500,088	29,064,421	29,460,513	10.799%	10.523%
Conner City of (Dool			101.6%		102.1%		98.7%		102.6%	
Sanger, City of (Pool 7) - Tier 1	Safety Fire	2% @ 50	7,879,763	7,775,454	7,261,501	7,222,650	112,086	108,466	26.285%	25.246%
682	Salety Tile	278 @ 30	101.3%	7,775,454	100.5%	7,222,030	103.3%	100,400	104.1%	23.240 /6
	Cofoty Fire	20/ @ 50		2 002 772		1 240 002		125.056	14.494%	14 1100/
Tier 2	Safety Fire	2% @ 50	2,956,679	2,882,772	1,371,283	1,340,993	136,331	135,956		14.119%
		20/ 0 5-	102.6%	4 500 404 455	102.3%	1 00 1 7 10 657	100.3%	00.054.50	102.7%	44.00567
Long Beach, City of	Miscellaneous	2% @ 55	1,560,158,528	1,520,131,150	1,269,322,613	1,234,749,237	37,663,831	38,254,531	12.235%	11.325%
300		2.7% @ 55	102.6%		102.8%		98.5%		108.0%	



			Fully Projected Liabilities Accrued Liabilities Total Normal Cost		. ,	er Cost				
				AVS		AVS	EFI	AVS	EFI	AVS
Selected Plans	Plan	Formula	EFI 6/30/2003	6/30/2003	EFI 6/30/2003	6/30/2003	6/30/2003	6/30/2003	6/30/2003	6/30/2003
LA County Office of Education	Miscellaneous	2% @ 55 2.5% @ 55	564,599,298 102.4%	551,553,822	402,099,259 103.0%	390,409,154	21,691,272 97.8%	22,170,381	15.124% 102.0%	14.827%
San Francisco BART	Miscellaneous	2% @ 55	1,185,551,524 101.6%	1,167,045,503	953,729,690 101.6%	939,071,558	31,559,501 98.6%	32,013,087	8.993% 103.2%	8.717%
Santa Maria Public Airport District 1066 (Pool 2)	Miscellaneous	2% @ 55	4,170,348 100.0%	4,169,492	3,485,126 99.5%	3,502,376	94,115 99.2%	94,875	12.014% 97.2%	12.360%
Pleasant Hill, City of (Pool 9) 512	Safety	3% @ 50	39,357,694 101.1%	38,927,637	30,517,623 100.5%	30,355,660	959,325 100.2%	957,730	26.011% 101.4%	25.658%
Oakland, City of 829	Miscellaneous	2% @ 55 2.7% @ 55	1,523,459,509 101.0%	1,508,666,145	1,212,823,287 101.3%	1,197,321,821	43,021,274 100.4%	42,853,645	19.175% 103.4%	18.552%
Merced, City of 364	Safety	3% @ 50	71,837,096 99.9%	71,896,845	56,848,806 99.4%	57,195,066	1,769,930 98.7%	1,793,241	14.800% 95.9%	15.429%
Redwood, City of 70	Miscellaneous	2% @ 55	147,997,788 101.5%	145,784,092	110,935,176 101.0%	109,793,366	4,574,910 99.6%	4,591,087	11.426% 101.9%	11.215%
Sacramento, City of 1122	Miscellaneous	2% @ 55	483,959,798 99.8%	484,843,179	318,761,164 97.8%	325,953,397	19,468,719 99.5%	19,566,613	11.401% 96.0%	11.875%
National City 251	Safety	3% @ 50	96,454,502 99.8%	96,625,573	76,094,477 99.0%	76,837,894	2,418,844 99.9%	2,420,068	32.832% 98.2%	33.441%
Turlock Mosquito Abatement District 851 (Pool 2)	Miscellaneous	2% @ 55	4,807,738 100.2%	4,798,825	4,229,791 99.8%	4,239,362	78,926 97.5%	80,985	18.866% 97.7%	19.314%



# Appendix 3: Risk Pool Liability and Cost Comparison

			Fully Projected Liabilities		Accrued Liabilities		Total Nor	mal Cost	<b>Employer Cost</b>	
									as a % of Payroll	
				AVS		AVS	EFI	AVS	EFI	AVS
Selected Plans	Plan	Formula	EFI 6/30/2003	6/30/2003	EFI 6/30/2003	6/30/2003	6/30/2003	6/30/2003	6/30/2003	6/30/2003
POOL 1	Miscellaneous	2% @ 60	629,857,148	624,110,324	435,843,560	430,371,544	23,163,583	23,595,455	6.224%	6.462%
			100.9%		101.3%		98.2%		96.3%	
POOL 2	Miscellaneous	2% @ 55	3,577,894,972	3,537,514,795	2,626,626,602	2,596,966,545	117,771,541	116,337,142	7.765%	7.578%
			101.1%		101.1%		101.2%		102.5%	
POOL 5	Miscellaneous	3% @ 60	459,181,247	454,310,731	339,958,287	335,029,580	15,673,305	15,365,879	10.896%	10.525%
			101.1%		101.5%		102.0%		103.5%	
POOL 6	Safety	2% @ 55	130,169,635	128,045,162	82,928,668	81,165,289	4,954,300	4,910,745	11.320%	11.159%
			101.7%		102.2%		100.9%		101.4%	
POOL 7	Safety	2% @ 50	1,625,273,044	1,625,564,826	1,212,391,189	1,218,082,935	42,968,082	41,560,955	12.204%	11.510%
			100.0%		99.5%		103.4%		106.0%	
POOL 9	Safety	3% @ 50	5,354,863,614	5,386,145,177	4,261,566,749	4,270,573,982	127,072,644	127,513,039	15.252%	15.333%
			99.4%		99.8%		99.7%		99.5%	

